COMMERCIAL-SCALE DEMONSTRATION OF THE LIQUID PHASE METHANOL (LPMEOHTM) PROCESS

ENVIRONMENTAL MONITORING REPORT NO. 10

For The Period

1 July - 30 September 1999

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and

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for the Air Products Liquid Phase Conversion Company, L.P.

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ACRONYMS AND DEFINITIONS

Acurex - Acurex Environmental Corporation (now ARCADIS, Geraghty & Miller)

Air Products - Air Products and Chemicals, Inc.

AFDU - Alternative Fuels Development Unit - The "LaPorte PDU"

Balanced Gas - A syngas with a composition of hydrogen (H₂), carbon monoxide (CO), and

carbon dioxide (CO₂) in stoichiometric balance for the production of methanol

BOD - Biochemical Oxygen Demand

Carbon Monoxide Gas - A syngas containing primarily carbon monoxide (CO); also called CO Gas

Crude Grade Methanol - Underflow from rectifier column (29C-20), defined as 80 wt% minimum purity;

requires further distillation in existing Eastman equipment prior to use

DME - dimethyl ether

DOE - United States Department of Energy

DOE-NETL - The DOE's National Energy Technology Laboratory (Project Team)

DOE-HQ - The DOE's Headquarters - Coal Fuels and Industrial Systems (Project Team)

DTP - Demonstration Test Plan - The four-year Operating Plan for Phase 3, Task 2 Operation

DVT - Design Verification Testing
Eastman - Eastman Chemical Company
EIV - Environmental Information Volume
EMP - Environmental Monitoring Plan

EMR - Environmental Monitoring Plan
EMR - Environmental Monitoring Report
EPRI - Electric Power Research Institute

HAPs - Hazardous Air Pollutants

Hydrogen Gas - A syngas containing an excess of hydrogen (H₂) over the stoichiometric balance for

the production of methanol; also called H2 Gas

IGCC - Integrated Gasification Combined Cycle, a type of electric power generation plant
IGCC/OTM - An IGCC plant with a "Once-Thru Methanol" plant (the LPMEOHTM Process) added-on

KSCF - Thousand Standard Cubic Feet

KSCFH - Thousand Standard Cubic Feet per Hour

LaPorte PDU - The DOE-owned experimental unit (PDU) located adjacent to Air Products' industrial

gas facility at LaPorte, Texas, where the LPMEOH™ process was successfully piloted

LDAR - Leak Detection and Repair

LPDME - Liquid Phase DME process, for the production of DME as a mixed coproduct with

methanol

LPMEOH™ - Liquid Phase Methanol (the technology to be demonstrated)

Main Plant Purge - Unreacted synthesis gas stream from LPMEOHTM process returned to Eastman's fuel gas

header

mg/m³ - Milligrams per cubic meter
NEPA - National Environmental Policy Act

NPDES - National Pollutant Discharge Elimination System
OSHA - Occupational Safety and Health Administration
Partnership - Air Products Liquid Phase Conversion Company, L.P.

PDU - Process Development Unit
PFD - Process Flow Diagram(s)
ppbv - parts per billion (volume basis)

Project - Production of Methanol/DME Using the LPMEOHTM Process at an

Integrated Coal Gasification Facility

psia - Pounds per Square Inch (Absolute)
psig - Pounds per Square Inch (gauge)
P&ID - Piping and Instrumentation Diagram(s)
RCRA - Resource and Conservation Recovery Act

Refined Grade Methanol - Distilled methanol, defined as 99.8wt% minimum purity; used directly in downstream

Eastman processes

SCFH - Standard Cubic Feet per Hour

Sl/hr-kg - Standard Liter(s) per Hour per Kilogram of Catalyst

ACRONYMS AND DEFINITIONS (cont'd)

Syngas - Abbreviation for Synthesis Gas

Synthesis Gas - A gas containing primarily hydrogen (H₂) and carbon monoxide (CO), or mixtures of

H₂ and CO; intended for "synthesis" in a reactor to form methanol and/or other

hydrocarbons (synthesis gas may also contain CO₂, water, and other gases)

Tie-in(s) - the interconnection(s) between the LPMEOH™ Process Demonstration

Facility and the Eastman Facility

TOC - Total Organic Carbon
TLV - Threshold Limit Value

TPD - Ton(s) per Day

WBS - Work Breakdown Structure

wt - Weight

1. Introduction

The Liquid Phase Methanol (LPMEOHTM) Demonstration Project at Kingsport, Tennessee, is a \$213.7 million effort being conducted under a cooperative agreement between the U.S. Department of Energy (DOE) and Air Products Liquid Phase Conversion Company, L.P. (the Partnership). Air Products and Chemicals, Inc. (Air Products) and Eastman Chemical Company (Eastman) formed the Partnership to execute the Demonstration Project. A demonstration unit producing 80,000 gallons per day (260 tons-per-day (TPD)) of methanol from coal-derived synthesis gas (syngas) was designed, constructed, and began a four-year operational period in April of 1997 at a site located at the Eastman complex in Kingsport. The Partnership will own and operate the facility for the four-year demonstration period.

This project is sponsored under the DOE's Clean Coal Technology Program, and its primary objective is to "demonstrate the production of methanol using the LPMEOHTM Process in conjunction with an integrated coal gasification facility." The project will also demonstrate the suitability of the methanol produced for use as a chemical feedstock or as a low-sulfur dioxide, low-nitrogen oxides alternative fuel in stationary and transportation applications. The project may also demonstrate the production of dimethyl ether (DME) as a mixed coproduct with methanol, if laboratory- and pilot-scale research and market verification studies show promising results. If implemented, the DME would be produced during the last six months of the four-year demonstration period.

The LPMEOH[™] process is the product of a cooperative development effort by Air Products and the DOE in a program that started in 1981. It was successfully piloted at a 10-TPD rate in the DOE-owned experimental unit at Air Products' LaPorte, Texas, site. This Demonstration Project is the culmination of that extensive cooperative development effort.

2. Project Description

The demonstration unit, which occupies an area of 0.6 acre, is integrated into the existing 4,000-acre Eastman complex located in Kingsport, Tennessee. The Eastman complex employs approximately 10,000 people. In 1983, Eastman constructed a coal gasification facility utilizing Texaco technology. The syngas generated by this gasification facility is used to produce carbon monoxide and methanol. Both of these products are used to produce methyl acetate and ultimately cellulose acetate and acetic acid. The availability of this highly reliable coal gasification facility was the major factor in selecting this location for the LPMEOHTM Process Demonstration. Three different feed gas streams (hydrogen gas or H₂ Gas, carbon monoxide gas or CO Gas, and Balanced Gas) are available from existing operations to the LPMEOHTM Demonstration Unit, thus providing the range of syngas ratios (hydrogen to carbon monoxide) needed to meet the technical objectives of the Demonstration Project.

For descriptive purposes and for design and construction scheduling, the project has been divided into four major process areas with their associated equipment:

- Reaction Area Syngas preparation and methanol synthesis reaction equipment.
- Purification Area Product separation and purification equipment.
- Catalyst Preparation Area Catalyst and slurry preparation and disposal equipment.
- Storage/Utility Area Methanol product, slurry, and oil storage equipment.

The physical appearance of this facility closely resembles the adjacent Eastman process plants, including process equipment in steel structures.

• Reaction Area

The reaction area includes feed gas compressors, catalyst guard beds, the reactor, a steam drum, separators, heat exchangers, and pumps. The equipment is supported by a matrix of structural steel. The most salient feature is the reactor, since with supports, it is approximately 84-feet tall.

• Purification Area

The purification area features two distillation columns with supports; one is approximately 82-feet tall, and the other 97-feet tall. These vessels resemble the columns of the surrounding process areas. In addition to the columns, this area includes the associated reboilers, condensers, air coolers, separators, and pumps.

• Catalyst Preparation Area

The catalyst preparation area consists of a building with a roof and partial walls, in which the catalyst preparation vessels, slurry handling equipment, and spent slurry disposal equipment are housed. In addition, a hot oil utility system is included in the area.

• Storage/Utility Area

The storage/utility area includes two diked lot-tanks for methanol, two tanks for oil storage, a slurry holdup tank, a trailer loading/unloading area, and an underground oil/water separator. A vent stack for safety relief devices is located in this area.

3. Process Description

The LPMEOHTM Demonstration Unit is integrated with Eastman's coal gasification facility. A simplified process flow diagram is included in Appendix A. Syngas is introduced into the slurry reactor, which contains a slurry of liquid mineral oil with suspended solid particles of catalyst. The syngas dissolves through the mineral oil, contacts the catalyst, and reacts to form methanol. The heat of reaction is absorbed by the slurry and is removed from the slurry by steam coils. The methanol vapor leaves the reactor, is condensed to a liquid, sent to the distillation columns for removal of higher alcohols, water, and other impurities, and is then stored in the day tanks for sampling before being sent to Eastman's methanol storage. Most of the unreacted syngas is recycled back to the reactor with the syngas recycle

compressor, improving cycle efficiency. The methanol will be used for downstream feedstocks and in off-site fuel testing to determine its suitability as a transportation fuel and as a fuel for stationary applications in the power industry.

Demonstration Test Plan

Following the start-up of the LPMEOHTM Demonstration Unit, a four-year test plan is being performed by Air Products and Eastman. The goals of the Test Plan are structured to meet the commercialization objectives for the LPMEOHTM Process. Excerpts from Commercialization Objectives from the program Statement of Work are included here to provide the global perspective of the Demonstration Plan:

"Primary Objective

The primary objective of the Project is to demonstrate the commercial scale production of methanol using the LPMEOH™ Process...

The LPMEOH™ Process technology is expected to be commercialized as part of an IGCC electric power generation system. Therefore, the Project incorporates the commercially important aspects of the operation of the LPMEOH™ Process which would enhance IGCC power generation. These important aspects of LPMEOH™ Process integrations are:

- The coproduction of electric power and of high value liquid transportation fuels and/or chemical feedstocks from coal. This coproduction requires that the partial conversion of synthesis gas to storable liquid products be demonstrated.
- Using an energy load following operating concept which allows conversion of off-peak energy, at attendant low value, into peak energy commanding a higher value. The load-following concept makes use of gasifier capacity that is under utilized during low-demand periods by using the LPMEOH™ Process to convert the excess synthesis gas to a storable liquid fuel for use in electric power generation during the peak energy periods. This operating concept requires that on/off and synthesis gas load following capabilities be demonstrated...

During operation, the instrumentation system will allow for the collection of engineering data, analysis and reporting which will be done by on-site technical personnel. Typical reporting will include on-stream factors, material and energy balances, reactor and equipment performance, comparison with laboratory and LaPorte Alternative Fuels Development Unit (AFDU) results, conversion efficiencies and catalyst activity...

Secondary Objective

A secondary objective of the Project is to demonstrate the production of DME (Dimethyl ether) as a mixed coproduct with methanol...

Subject to Design Verification Testing (DVT), the Partnership proposes to enhance the Project by including the demonstration of the slurry reactor's capability to produce DME as a mixed co-product with methanol...

DVT is required to address issues such as catalyst activity and stability and to provide data for engineering design and demonstration decision making...

At the conclusion of the DVT Steps, a joint Partnership/DOE decision will be made regarding continuation of the methanol/DME demonstration. Timing of the final decision must ensure that the necessary design, procurement, construction and commissioning can be completed to allow for (Phase 3, Task 2.2) operation at the end of the primary LPMEOH™ process demonstration period."

The full Demonstration Test Plan (issued September 1996) provides details in the strategy and conditions to be tested during the four-year operating period.

4. Environmental Monitoring Plan (EMP) Description

Air Products Liquid Phase Conversion Company, L.P., has constructed and is operating the 260 ton-per-day Liquid Phase Methanol (LPMEOHTM) Demonstration Unit at the Eastman Chemical facility in Kingsport, Tennessee. As specified in the Cooperative Agreement, the Partnership developed an Environmental Monitoring Plan (EMP) (issued August 1996) which describes in detail the environmental monitoring activities to be performed during the operation of the LPMEOHTM Demonstration Unit. The purpose of the EMP is to: 1) document the extent of compliance monitoring activities, i.e., those activities required to meet permit requirements, 2) confirm the specific environmental impacts predicted in the National Environmental Policy Act documentation, and 3) establish an information base for the assessment of the environmental performance of the technology for future commercialization.

The EMP describes three categories of environmental monitoring which are performed as a result of the operation of the LPMEOHTM Demonstration Unit. Details of streams internal to the demonstration unit are available in the Technical Progress Reports for the Project.

4.1 Eastman Reporting of Publicly Available Technical Data

As defined in the Statement of Work for the Demonstration Project, Eastman will provide data on three areas of operation of the Chemicals-from-Coal complex (refer to Table 4.1 for a breakdown of the streams to be monitored):

- 1) Gasifier material balance data
- 2) 10C-30 Guard Bed operating data
- 3) Wastewater and alcohols to wastewater treatment system

This technical information provides information from Eastman's existing facilities to provide an overall assessment of the LPMEOH™ technology. A Special Topical Report will provide this information. Updates, if any, are included in Quarterly EMRs if a significant change occurs.

4.2 Compliance Monitoring

Four areas of compliance monitoring have been identified to satisfy the permit requirements for the demonstration unit (Table 4.2):

- 1) Combined Vapor Flow from Demonstration Unit to Boiler
- 2) Fugitive Emissions
- 3) Particulate Emissions
- 4) Wastewater Treatment System Outlet Stream

Each of these sources is monitored at a frequency mandated by the relevant permit or industrial hygiene practice. The EMRs will include the results of any compliance monitoring generated during the reporting period.

4.3 Supplemental Monitoring

Three areas of supplemental monitoring have been identified in the EMP (Table 4.3):

Summary of Major Material Balance Streams for Demonstration Unit

The major feed streams (CO Gas, H₂ Gas, Balanced Gas) and product flows (Refined Grade Methanol, Crude Grade Methanol, Main Plant Purge) are provided as a summary table of the cumulative stream flows for the reporting period.

Solid/Liquid Discharges

Four other streams can be generated from the demonstration unit:

- 1) Compressor and Pump Lubricants
- 2) Oil Recovered in Oil/Water Separator
- 3) Spent Catalyst
- 4) 29C-40 Guard Bed Adsorbent

Any quantities generated during the reporting period are included in the EMR.

Noise

The EMP identified that a noise survey around the 29K-01 Recycle Compressor was planned during the initial start-up of the demonstration unit.

TABLE 4.1

LPMEOH™ DEMONSTRATION UNIT

PUBLICLY AVAILABLE TECHNICAL DATA FROM EASTMAN CHEMICALS-FROM-COAL COMPLEX

Environmental Media

General Parameters

Coal Pressure, Temperature, Coal Analysis

Oxygen to Gasifier Pressure, Temperature, %O₂

Water to Gasifier Pressure, Temperature

Waste Water from Gasifier Pressure, Temperature, Total Organic

Carbon

Clean Synthesis Gas from Gasifier Pressure, Temperature, Flow

Sulfur Recovered from Gasifier Pressure, Temperature, Flow, %S

Carbon Dioxide from Gasifier Pressure, Temperature, Flow, %CO₂

Slag from Gasifier Pressure, Temperature, Flow

Balanced Gas from 10C-30 Pressure, Temperature, Flow,

Guard Bed Composition

Wastewater and Alcohols to Flow, Composition, BOD

Wastewater Treatment System

TABLE 4.2

LPMEOH™ DEMONSTRATION UNIT

COMPLIANCE MONITORING

Environmental Media

General Parameters

Combined Vapor Flow from Demonstration

Unit to Boiler

Composition

Fugitive Emissions

Leak Detection and Repair (LDAR) Report, Volatile Organic Carbon (VOC), Background Ambient CO Concentration

Particulate Emissions

Threshold Limit Value (TLV)

Wastewater Treatment System Outlet

Stream

Flow, Total Organic Carbon, pH

TABLE 4.3

$\textbf{LPMEOH}^{\text{\tiny{TM}}}\,\textbf{DEMONSTRATION}\,\textbf{UNIT}$

SUPPLEMENTAL MONITORING

Environmental Media	General Parameters
CO Gas to LPMEOH™ Demonstration Unit	Cumulative Flow for Quarter
H₂ Gas to LPMEOH™ Demonstration Unit	Cumulative Flow for Quarter
Balanced Gas to LPMEOH™ Demonstration Unit	Cumulative Flow for Quarter
Main Vapor Purge from LPMEOH™ Demonstration Unit	Cumulative Flow for Quarter
Refined Grade Methanol	Cumulative Flow for Quarter
Crude Grade Methanol	Cumulative Flow for Quarter
Compressor and Pump Lubricants	Weight or Volume
Oil Recovered in Oil/Water Separator	Weight or Volume
Spent Catalyst	Weight, Weight% Solids
29C-40 Guard Bed Adsorbent	Weight or Volume
Noise Survey for 29K-01 Recycle Compressor	dBa

5. Project Summary

Synthesis gas was first introduced to the LPMEOHTM Demonstration Unit on 02 April 1997. The nameplate capacity of 80,000 gallons of methanol per day (260 tons-per-day) was achieved on 06 April 1997. During the reporting period, availability for the LPMEOHTM Demonstration Unit was 100%. Table 5.1 summarizes the onstream time and outages of the LPMEOHTM Demonstration Unit during the reporting period.

6. Updates on Eastman "Chemicals-from Coal" Facility Publicly Available Technical Data

6.1 Gasifier Facility

As defined in Section 7.1 of the Environmental Monitoring Plan, publicly available technical data from the Eastman "Chemicals-from-Coal" facility, which includes data on the streams associated with the Gasifier facility, will be issued in a Special Topical Report. If a significant change in gasifier facility operation (e.g., feedstock change, equipment modifications or additions, etc.) occurs, then an update will be provided in a future EMR.

6.2 10C-30 Catalyst Guard Bed

As defined in Section 7.1 of the Environmental Monitoring Plan, publicly available technical data on the trace impurities entering and leaving the Catalyst Guard Bed will be issued in a Special Topical Report.

During the reporting period, there was no change of adsorbent or process change related to the operation of the 10C-30 Catalyst Guard Bed. If a significant change occurs, then an update will be provided in a future EMR.

6.3 Wastewater and Alcohols to Wastewater Treatment System

The report on publicly available technical data from the Eastman "Chemicals-from-Coal" facility, which includes data on the streams associated with the wastewater and alcohols to the Wastewater Treatment System, will be issued in a Special Topical Report. This will consist of a comparison of the flow, composition, and BOD load of this stream before and after the addition of the LPMEOHTM Demonstration Unit.

Table 5.1

Summary of LPMEOHTM Demonstration Plant Onstream Time and Outages - July / September 1999

Reason for Shutdown	Syngas Outage Syngas Outage Syngas Outage	
Shutdown Hours	1.0 22.7 12.5	2171.7 2171.7 100.00
Operating Hours	697.7 206.6 19.0 1248.5	
Operation End	7/30/99 01:40 8/7/99 17:15 8/9/99 11:00 9/30/99 23:59	Total Operating Hours Syngas Available Hours Plant Availability, %
Operation Start	7/1/99 00:00 7/30/99 02:40 8/8/99 16:00 8/9/99 23:30	≚ <i>6</i> 6 ቬ

7. Compliance Monitoring

7.1 Combined Vapor Flow from Demonstration Unit to Boiler

A sample of the header gas from the LPMEOHTM Demonstration Unit must be analyzed as part of the Boiler and Industrial Furnace regulations within RCRA. Sampling is currently required every three years. During the development of the EMP, it was anticipated that the new tie-in from the LPMEOHTM Demonstration Unit to the Eastman fuel header would require testing as a new source. After the EMP was published, it was determined that the new tie-in was not considered a significant change and did not require testing. Therefore, with the current sampling schedule, the next sample will be taken in February of 2000.

No activity occurred during the reporting period.

7.2 Fugitive Emissions

7.2.1 Leak Detection and Repair (LDAR)

Appendix B contains the latest report on Leak Detection and Repair at the LPMEOHTM Demonstration Unit. All items (valves, pump seals, fittings) which were found to exceed the allowable leakage rate (as measured by concentration levels in air) were able to be repaired by Eastman.

7.2.2 Ambient Carbon Monoxide Background Concentration

This one-time study was completed in June of 1998, and documents the concentration of CO that is encountered by a LPMEOH™ operations person during the course of a normal day of plant operations. The report on this study is included in Environmental Monitoring Report No. 5. Both the time-weighted average and the peak values for CO were below the established limits by the Tennessee Operational Health and Safety Administration.

7.3 Particulate Emissions

This one-time study was completed in July of 1997, and documents the exposure level to particulate emissions that is encountered by a LPMEOHTM operations person during the catalyst charging process. The report on this study is included in Environmental Monitoring Report No. 1. Some engineering modifications to the catalyst loading system are planned to reduce the dust concentration and potential personnel exposure.

7.4 Wastewater Treatment System Outlet Stream

The reports on the outfall from the Wastewater Treatment System (Discharge Number 002) for the reporting period is attached in Appendix C. There were no permit excursions.

A process stream within the existing Eastman facility which is impacted by the operation of the LPMEOHTM Demonstration Unit contains the byproduct alcohols and water which are

generated in parallel with the production of methanol. This stream is sent to the Eastman Wastewater Treatment System. As noted in Section 6.3, a comparison of the flow, composition, and BOD load of this stream before and after the addition of the LPMEOHTM Demonstration Unit will be included in a Special Topical Report on publicly available technical data from the Eastman "Chemicals-from-Coal" facility.

8. Supplemental Monitoring

8.1 Total Synthesis Gas Use and Methanol Production

Table 8.1 contains the summary of the major process flows to and from the LPMEOH™ Demonstration Unit for the reporting period. Approximately 4,390,000 gallons (14,492 tons) of methanol (Refined and Crude Grades) were produced during the reporting period.

8.2 Oil/Water Separator

A total of 18,000 pounds of oil was removed from the Oil/Water Separator during the reporting period. This material was incinerated for energy recovery.

8.3 Compressor and Pump Lubricants

No material was generated during the reporting period.

8.4 Spent Catalyst Slurry

A total of 64,800 pounds of spent catalyst slurry was removed from the LPMEOHTM Reactor (drained into drums) during the reporting period. A total of 51,600 pounds of spent catalyst slurry was shipped to the off-site catalyst reclaimer. Of this, a total of 13,200 pounds had been stored on site and removed from the LPMEOHTM Reactor during the prior reporting period. The remaining amount of spent catalyst slurry (26,400 pounds) is presently stored on site, and arrangements are being made to ship this material to the off-site catalyst reclaimer.

8.5 29C-40 Catalyst Guard Bed Spent Adsorbent

As reported in Environmental Monitoring Report No. 9, approximately 6,553 pounds of activated carbon was removed from the 29C-40 Carbonyl Guard Bed (placed into drums). The spent activated carbon was sent offsite for disposal during the reporting period.

8.6 Noise

The results of noise dosimetry measurements of the entire LPMEOH™ Demonstration Unit were reported in Environmental Monitoring Report No. 1. The results of an area noise survey at each platform of the LPMEOH™ Demonstration Unit and around the 29K-01 Recycle Compressor were reported in Environmental Monitoring Report No. 2. No additional surveys were performed during the reporting period.

Table 8-1
Synthesis Gas Use and Methanol Production - July/September 1999
LPMEOH™ Demonstration Unit

	July 1999	August 1999	Sept. 1999	Total
Consumption, KSCF				
Balanced Gas	328,086.9	295,437.5	446,584.2	1,070,108.6
CO Gas	41.5	159.3	165.3	366.1
H ₂ Gas	0.0	0.0	0.0	0.0
Production, Tons				
Crude Methanol	1,575.4	1,404.6	2,205.8	5,185.9
Refined Methanol	2,826.3	2,559.5	3,921.0	9,306.7
Total Purge Gas, KSCF	50,816.3	46,621.0	48,935.7	146,373.0

9. Compliance

9.1 Compliance with Permit Limits

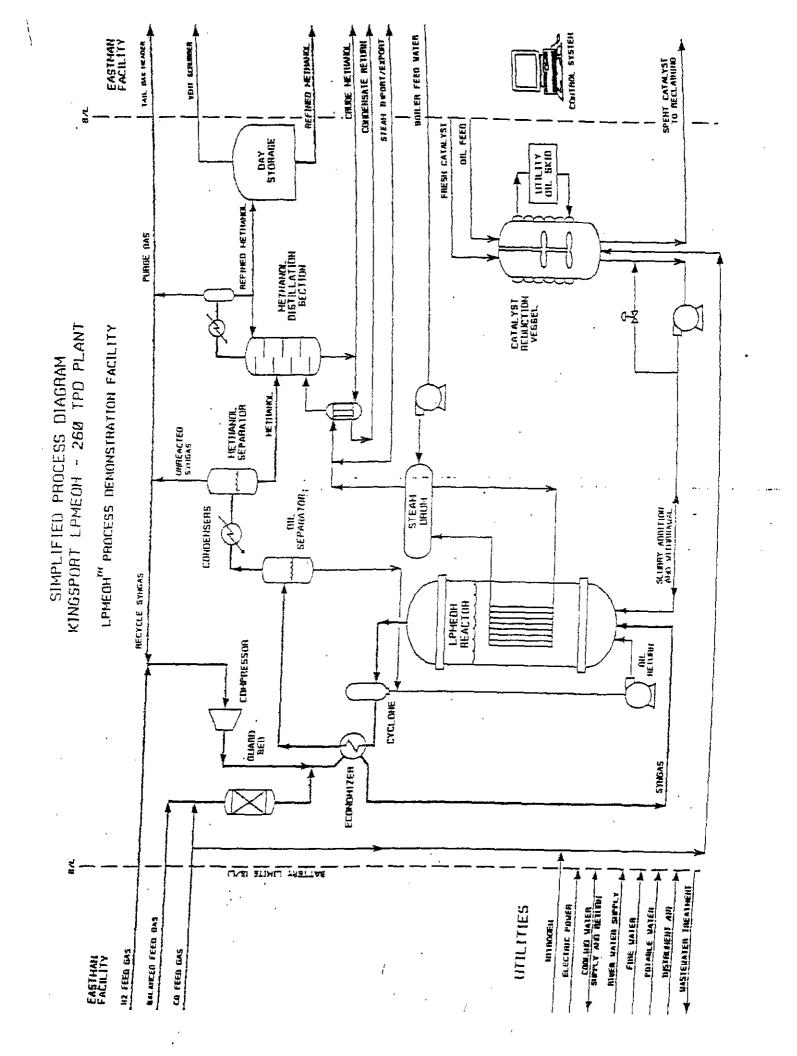
There were no excursions outside permit limits associated with the operation of the LPMEOHTM Demonstration Unit.

10. Problems and Recommendations

There have been no significant problems arising in the environmental area.

APPENDICES

APPENDIX A - SIMPLIFIED PROCESS FLOW DIAGRAM



APPENDIX B - LEAK DETECTION AND REPAIR REPORT

40 CFR Part 63 SubPart H -- Semi-Annual Monitoring Summary EASTMAN CHEMICAL P.O. Box 511 Kingsport, TN 37662

Period: 01/01/1999 to 06/30/1999

PROCESS UNIT: METHANOL 29 COMPONENT CLASS: VALVES

			******		******	
PERIOD	PERIOD	NUMBER	NUMBER	PERCENT	NUMBER	NUMBER NOT
START	END	TESTED	LEAKERS	LEAKERS	UNREPAIRED	REPAIRABLE

* * * No Data Logged for VALVES * * *

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ROCESS UNIT: METHANOL 29

COMPONENT CLASS: PUMPS

ı							
	ERIOD	PERIOD END	NUMBER TESTED	NUMBER LEAKERS	PERCENT LEAKERS	NUMBER UNREPAIRED	NUMBER NOT REPAIRABLE
	1/01/1999	01/31/1999	11	0	0.00	0	0
	2/01/1999	02/28/1999	11	1	9.09	0	0
	3/01/1999	03/31/1999	11	0	0.00	0	0
	4/01/1999	04/30/1999	11	0	0.00	0	0
	5/01/1999	05/31/1999	11	0	0.00	0	0
	6/01/1999	06/30/1999	11	1	9.09	0	0

40 CFR Part 63 SubPart H -- Semi-Annual Monitoring Summary

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FROCESS UNIT: METHANOL 29 COMPONENT CLASS: COMPRESSORS

PERIOD	PERIOD	NUMBER	NUMBER	PERCENT	NUMBER	NUMBER NOT			
START	END	TESTED	LEAKERS	LEAKERS	UNREPAIRED	REPAIRABLE			

^{* * *} No COMPRESSORSs In CMPU * * *

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PROCESS UNIT: METHANOL 29

COMPONENT CLASS: AGITATORS

PERIOD	PERIOD	NUMBER	NUMBER	PERCENT	NUMBER	NUMBER NOT	
START	END	TESTED	LEAKERS	LEAKERS	UNREPAIRED	REPAIRABLE	
					~		

* * * No AGITATORSs In CMPU * * *

40	CFR	Part	63	SubPart	Н		Semi-Annual	Monitoring	Summary	PAGE
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				:======:		
START	END	TESTED	LEAKERS	LEAKERS	UNREPAIRED	REPAIRABLE
PERIOD	PERIOD	NUMBER	NUMBER	PERCENT	NUMBER	NUMBER NOT
	=======================================					
PROCESS U			COMPONENT		CONNECTORS	

* * * No Data Logged For CONNECTORS * * *

End Of Report - (ver. 2.4)

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40CFR Part 63 SubPart H - Semi Annual Delayed Repairs Report EASTMAN CHEMICAL P.O. Box 511 Kingsport, TN 37662

Period: 01/01/1999 to 06/30/1999

PROCESS UNIT: METHANOL 29

COMPONENT DRAWING COMPONENT INSPECTION FAG NUMBER CLASS DATE

REASON FOR DELAYED REPAIR

29E2OS1 29F-B-003 CONNECTOR 02/02/1999 Technically Infeasible

End Of Report

40 CFR Part 63 SubPart H -- Semi-Annual Exempt Compressor Report EASTMAN CHEMICAL P.O. Box 511 Kingsport, TN 37662

Period: 01/01/1999 to 06/30/1999

PROCESS UNIT: METHANOL 29

INSPECTION	DRAWING	COMPONENT	BACK-	TEST	NET	TEST			
DATE	NUMBER	TAG	GROUND	READING	READING	RESULT			

* * * No Exempt Compressors In CMPU * * *

End Of Report

...

40 CFR Part 63 SubPart H -- Semi-Annual Pressure Relief Device Report EASTMAN CHEMICAL P.O. Box 511 Kingsport, TN 37662

Period: 01/01/1999 to 06/30/1999

PROCESS UNIT: METHANOL 29

INSPECTION	DRAWING	COMPONENT	BACK-	TEST	NET	TEST
DATE	NUMBER	TAG	GROUND	READING	READING	RESULT
		lief Devices In C		5.有要数学杂类产品会员	, m 62 iii ân m r; ; ; ; ; ; n re; p	*********

End Of Report

40 CFR Part 63 SubPart H -- Semi-Annual Closed Vent System Report EASTMAN CHEMICAL P.O. Box 511 Kingsport, TN 37662

Period: 01/01/1999 to 06/30/1999

PROCESS UNIT: METHANOL 29

	INSPECTION DATE	DRAWING NUMBER	COMPONENT TAG	BACK- GROUND	TEST READING	net Reading	TEST RESULT
.===							

* * * No Data Logged For Closed Vent Systems * * *

End Of Report

APPENDIX C - NPDES REPORTS FOR WASTEWATER TREATMENT SYSTEM OUTLET STREAM

PAGE 2 OF 7

YEAR MO DAY (707)864-0845;pm11090;v5:01;4/1/80

AREA CODE NUMBER Forms by WindowChem (423) 229-2000

OFFICER OR AUTHORIZED AGENT

90 - 80 - 66

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

DISCHARGE MONITORING REPORT (DMR)

DISCHARGE NUMBER 002 G PERMIT NUMBER TN0002640

DIVISION OF EASTMAN CHEMICAL CO.

PERMITTEE NAME/ADDRESS:

TN EASTMAN DIVISION

MONITORING PERIOD

INDUSTRIAL PROCESS WASTEWATER

OMB No. 2040-0004

(SUBR 06)

(NPDES) MAJOR F.FINAL

FORM APPROVED

T NO DISCHARGE □ **EFFLUENT** 99 - 07 - 31

ဥ

99 - 07 - 01

FROM

Location: SULLIVAN COUNTY TN 37662-5393

Facility: TN EASTMAN - KINGSPORT

KINGSPORT, TN 37662-5393

P.O. BOX 1993

11. Zo - 17. lo 1 4 5 - 1 1 G G 11 NO. I. 100 Sample Composite Composite Colutes Composite Composite Composite (02-69)Type Ţ DATE Grab Ş CONTINUEDUS NOTE: Read instructions before completing this form ONCEMBORE ONCEMBONTH Frequency of Continuous Analysis (64-68)131 131 TELEPHONE 17 131 131 37 (62-63)Š Ŗ 0 0 0 0 0 0 0 LND ¥G/L MG/L MG/L MG/L MG/L S 1 (12) 13) 13 13) (19) (19) OXIEY MAX Concentration DAILY MAX 9.0 MAXIMUM OK BE MAXIMUM DAILY MAX DAILY MAX **** < 0.010 (54-61) < 0.002 0.005 0.005 0.100 0.100 3.4 8.2 Quantity or 30.5 Mon Avg. DID48 MON AVG AVERAGE WON AVG MON AVG MON AVG < 0.010 0.050 (46-53)******* ****** ******* -0.005 0.005 < 0.002 0.050 9 (4 Card Only) MINIMUM MINIMUM (38-45)******** ****** ******* ****** ***** ****** ****** ******* ****** ***** ***** 89 6.0 Loading LBS/DAY LBS/DAY LBS/DAY LBS/DAY **LBS/DAY** LBS/DAY L (92 (56) (26) 26) (28) (92) 150.77 DXIEY MAX Quantity or DATEY MAX PARE MAX OMEY MAX ŽT.85 DATEY MAX DATEY MAX MAXIMUM < 2.29 < 0.44 21:85 (54-61)****** 4,061 99. 1.05 763 10093 MON AVG 10.49 MON'AVG (3 Card Only) 6664 MON AVG **AVERAGE** MON AVG **MON AVG** MON AVG < 2.29 10.93 37.58 (46-53)****** 1,823 99. 10:93 ^ 40 4 ******* 1.05 334 PERMIT REQUIREMENT MEASUREMENT MEASUREMENT MEASUREMENT PERMIT REQUIREMENT MEASUREMENT MEASUREMENT PERMIT REQUIREMENT MEASUREMENT MEASUREMENT REQUIREMENT PERMIT REQUIREMENT REQUIREMENT PERMIT REQUIREMENT SAMPLE PERMIT SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE PERMIT NAME / TITLE PRINCIPAL EXECUTIVE OFFICER CHROMIUM, TOTAL (AS CR) **EFFLUENT GROSS VALUE EFFLUENT GROSS VALUE** CYANIDE, TOTAL (AS CN) COPPER, TOTAL (AS CU **EFFLUENT NET VALUE EFFLUENT NET VALUE EFFLUENT NET VALUE EFFLUENT NET VALUE EFFLUENT NET VALUE PARAMETER** NITROGEN, AMMONIA LEAD, TOTAL (AS PB) (32-37)SOLIDS, TOTAL FOTAL (AS N) 00400 1 0 0 00610 2 0 0 00720 2 0 0 01051 2 0 0 SUSPENDED 00530 1 0 0 01034 2 0 0 01042 2 0 0

COMMENT AND EXPLANATION OF ANY VIOLATIONS

Tennessee Eastman Division

TYPED OR PRINTED

H. H. Holliman, President

(Reference all attachments here)

SIGNATURE OF PRINCIPAL EXECUTIVE I CENTRY UNDER PENALTY OF LAW THAT THE DECLARATION ASSUED THAT QUALIBLE PROSECUED OF ASSUE THAT QUALIBLE PROSECUED OF ASSUED THAT QUALIBLE PROSECUED OF ASSUED THAT QUALIBLE PROSECUED OF ASSUED THE PERSON OF PROSECUED OF THE PERSON OF PE In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance.

EPA FORM 3320-1 (REV.9-88) Previous editions may be used.

(REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

(423) 229-2000 99 - 08 - 06
AREA CODE NUMBER YEAR MO DAY Forms by Wendow Chem. (107) 984-8945 ph/1980-5-01-4178

SRINCIPAL EXECUTIVE

OFFICER OR AUTHORIZED AGENT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITTEE NAME/ADDRESS: TN EASTMAN DIVISION

DISCHARGE MONITORING REPORT (DMR)

DISCHARGE NUMBER 002 G PERMIT NUMBER TN0002640

DIVISION OF EASTMAN CHEMICAL CO.

INDUSTRIAL PROCESS WASTEWATER

OMB No. 2040-0004 FORM APPROVED

(SUBR 06)

MAJOR

F - FINAL

** NO DISCHARGE EFFLUENT

99 - 07 - 31

ဥ

99 - 07 - 01

FROM

Location: SULLIVAN COUNTY IN 37662-5393

Facility: IN EASTMAN-KINGSPORT

KINGSPORT, TN 37662-5393

P.O. BOX 1993

MONITORING PERIOD

E. (Sev.) 1650 Sample Composite Composite Composite Type (02-69)DATE 36-T.708 ₹ NOTE: Read instructions before completing this form Frequency of THOUGH Continuous Analysis (64-68)13 131 TELEPHONE 3 (62-63)**일** 교 0 0 0 0 LNO MG/L ¥G/L į (18) (19) Manny. Concentration STORT DATES 1.270 DAIIPPINAX MAXIMUM (24-61)0.059 上 表 0.033 ******* ******* Quantity or 1:690 MON AVG 0.635 MON AVG AVERAGE (46-53)0.033 ******* 0.059To the second *** (4 Card Only) MINIMOM (38-45)Personal Property ******* **** ******* ******* ***** DOBECTION OR PAPENYEAN IN ACCORDANCE WITH A STATEM DESCRIPED ASSURE THAT QUALIFIED PERSONNEL MOCKELL CATTER AND EVALUATE THE MOTHATURA REMOTTING THE OFFICE ASSURED AND THE ORD CATTERING THE DESCRIPE OF THE ORD CATTERING THE DESCRIPE OR CATTERING THE DESCRIPE ASSURED THE ORD CATTERING THE DESCRIPE ASSURED THE ORD CATTERING. THE CATTERING THE DESCRIPE OF MY EMPHATOR AND CATTER AND COMPLETE I AND AN ARE THAT THESE ALS SOMPTON TRANSMERS OR REMOTTER OF THE ORD CATTER IN AN OFFICE AND COMPLETE AND CO CERTIFY LANDEL PENALTY OF LAW THAT THIS DOCLAGHT AND ALL ATTACHMENTS WERE FREPARED UNDER M LBS/DAY LBS/DAY LBS/DAY Quantity or Loading II N MGD (<u>0</u>3 (28) (29) 92 DAILEY NAX BS00 DAILT MAX 869:66 ATEY MAX REPORT DAIEY MAX MAXIMUM (54-61)12.95 2,371 28.8 7.17 138:77 MON'AVG REPORT MÖN AVG (3 Card Only) 369.28 HON AVG 4000 ION AVG AVERAGE 12.95 1,084 (46-53)7.17 MEASUREMENT MEASUREMENT MEASUREMENT MEASUREMENT MEASUREMENT MEASUREMENT MEASUREMENT REQUIREMENT REQUIREMENT REQUIREMENT REQUIREMENT REQUIREMENT REQUIREMENT REQUIREMENT SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE PERMIT PERMIT PERMIT PEBMIT PERMIT PERMIT PERMIT NAME / TITLE PRINCIPAL EXECUTIVE OFFICER **EFFLUENT GROSS VALUE** THRU TREATMENT PLANT **EFFLUENT GROSS VALUE** H. H. Holliman, President BOD, CARBONACEOUS NICKEL, TOTAL (AS NI) FLOW, IN CONDUIT OR EFFLUENT NET VALUE EFFLUENT NET VALUE **PARAMETER** ZINC, TOTAL (AS ZN) 80082 2 W 0 01092 2 0 0 50050 1 0 0 01067 2 0 0 05 DAY, 20C

COMMENT AND EXPLANATION OF ANY VIOLATIONS TYPED OR PRINTED

Tennessee Eastman Division

(Reference all attachments here)

in addition to taking reasonable steps to prevent instances of noncomptiance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant

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PERMITTEE NAME/ADDRESS:

TN EASTMAN DIVISION

DIVISION OF EASTMAN CHEMICAL CO.

P.O. BOX 1993

KINGSPORT, TN 37662-5393

Facility: TN EASTMAN - KINGSPORT

Location: SULLIVAN COUNTY TN 37662-5393

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM DISCHARGE MONITORING REPORT (DMR)

(NPDES) MAJOR

> PERMIT NUMBER TN0002640

(SUBR 06) F - FINAL DISCHARGE NUMBER

OMB No. 2040-0004 FORM APPROVED

INDUSTRIAL PROCESS WASTEWATER

** NO DISCHARGE **EFFLUENT** 99 - 08 - 31

MONITORING PERIOD

2

99 - 08 - 01

NOTE: Read instructions before completing this form

AREA CODE NUMBER YEAR MO DAY Forms by WindowChem(707)664-0845,pin11080;v3-01;41/788 ल्बा । जिल्ला E. . Territ Ton 99 - 09 - 13 Composite Composite Composite Composite Composite Sample (02-69) DATE Type Grab ٤ Frequency of ONGEMONTH Continuous Analysis (423) 229-2000 (64-68)617 13 21, i= 3), [0:0 TELEPHONE ₹ 13 13 37 1 <u>ह</u> (62-63) Si 전 0 o 0 0 0 0 0 MG/L E MG/L MG/L ₩G/L ¥6/2 S (19) (19) (12) 139 (39) (18) SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT 0.690 Daily Max Concentration MAXIMUM DAILY MAX ******* < 0.010 < 0.030 < 0.003 (54-61)0.008 8 0.5 7.7 0.048 MON AVG Quantity or O OSO MON AVG 0.172 MON AVG 0:050 Mon Avg AVERAGE 1 (46.53)< 0.010 ****** 0.008 < 0.003 < 0.030 ******* 0.3 (4 Card Only) MINIMUM MINIME (38-45)entrate and ****** es contact ***** ****** ****** SAN PROPER ****** ******* ******* I CREIFY UNDER FEMALTY OF LAW THAT THE DOCLARENT AND ALL ATTACHERSTS WERE FREPARED INNERS HYDINELYNON & REFERENCE OF ACCORDANCE WHICH A SYSTEM ASSERES THAT COURTED RECOVERED FROM CARLED THE CONTRIBUTION OF THE PROPERTY OF THE ACCORDATE AND COMPLETE TAM WARE THAT THEIR ASSEMBLY FOR ALTHER FOR CHARLES OF THE PROSIBILITY OF THE ACCORDATE THAT THE PROPERTY FOR ALTHER FOR THE PROPERTY FOR ALTHER FOR THE PROSIBILITY OF THE ACCORDATE THAT THE PROPERTY THE PROPERTY THAT THE T 6.6 LBS/DAY LBS/DAY LBS/DAY LBS/DAY LBS/DAY LBS/DAY Loading į (26) (26) (26) 8 (28) **2**8 DAILYMAX DAILY MAX Quantity or DAILY MAX DAILY MAX DAILY MAX DAILY MAX MAXIMUM 0.56 < 2.09 < 5.93 (54-61)150.77 ****** 9,055 74.95 21.85 21.85 1.50 32687 13329 119 10,93 MON AVG (3 Card Only) 10.49 MON AVG MON AVG MON AVG AVERAGE < 0.56 37.58 2,848 < 2.09 10.93 < 5.93 46-53) ******* 1.50 8 PERMIT REQUIREMENT PERMIT REQUIREMENT MEASUREMENT MEASUREMENT MEASUREMENT REQUIREMENT MEASUREMENT REQUIREMENT MEASUREMENT REQUIREMENT REQUIREMENT MEASUREMENT MEASUREMENT PERMIT REQUIREMENT PERMIT SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE PERMIT NAME / TITLE PRINCIPAL EXECUTIVE DEFICER **Fennessee Eastman Division** H. H. Holliman, President CHROMIUM, TOTAL (AS CR) **EFFLUENT GROSS VALUE EFFLUENT GROSS VALUE** CYANIDE, TOTAL (AS CN) COPPER, TOTAL (AS CU TYPED OR PRINTED EFFLUENT NET VALUE EFFLUENT NET VALUE **EFFLUENT NET VALUE EFFLUENT NET VALUE** EFFLUENT NET VALUE **PARAMETER** NITROGEN, AMMONIA LEAD, TOTAL (AS PB) (32-37)SOLIDS, TOTAL TOTAL (ASN) 01034 2 0 0 01042 2 0 0 01051 2 0 0 00610 2 0 0 00720 2 0 0 00400 1 0 0 SUSPENDED 00530 1 0 0

COMMENT AND EXPLANATION OF ANY VIOLATIONS

(Reference all attachments here)

in addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant

REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.) instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance.

PAGE 3 OF 7

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) MAJOR

002 G DISCHARGE MONITORING REPORT (DMR)

PERMIT NUMBER TN0002640

DIVISION OF EASTMAN CHEMICAL CO.

P.O. BOX 1993

PERMITTEE NAME/ADDRESS: TN EASTMAN DIVISION

EFFLUENT DISCHARGE NUMBER | F - FINAL MONITORING PERIOD

FORM APPROVED OMB No. 2040-0004

(SUBR 06)

NOTE: Read instructions before completing this form. INDUSTRIAL PROCESS WASTEWATER ** NO DISCHARGE | ... 99 - 08 - 31 5 99 - 08 - 01 FROM

Location: SULLIVAN COUNTY TN 37662-5393

Facility: TN EASTMAN - KINGSPORT KINGSPORT, TN 37662-5393

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:	\ /	(3 Card Only)	Quantity or	Loading	(4 Card Only)	Quantity or	Concentration		2	Frequency of	Sample
PARAMETER	X	(46-53)	(54-61)		(38-45)	(46-53)	(54-61)		ĭ	Analysis	Туре
(32-37)	/	AVERAGE	MAXIMUM	TINO	MINIMUM	AVERAGE	MAXIMUM	UNIT	(62-63)	(64-68)	(02-69)
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ZINC, TOTAL (AS ZN)	SAMPLE MEASUREMENT	6.59	6:59	(56)	****	0.033	0.033	(19)	0	1/31	Composite
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H. H. Holliman, President Tennessee Eastman Division	ORECTON PROPELLY G WAD JANA INFORMATIC AWARE THA	ODDITION OF MERVARIAN & ACCORDANCE WITH A STRING DESCRIPTO, ACARE, TWA COLLINED PERSONS. WHO ANALOZE THE STRING OF THESE FERDING DISCLINE BASED ON WITH DIQUES OF THE FELDING OF PERSONS. WHO ANALOZE THE STRING OF THESE FERDING DISCLIN RESPONSIBLE FOR GATHERDO THE BROGALATION, THE INFORMATION TO THE BEST OF THE STRING AND RELIES THE ACCORDANCE AND COLDINARY OF THE PROGALATION IN WAILE THAT THERE ALS DISCLINED OF THE STRING THE SHAPPING THE SHAPPING THE SHAPPING THE PROBING THE STRING THE PROBING THE STRING THE SHAPPING TH		NOMED TO ASSIGE TWAT QUALFIED PERSONGER, ASSESSION OF PERSONG WINE PERSON OF PERSONGER FOR CONTRIBUTION OF THE DEPOSALATION, THE DESIRE, FIRE ACCURATE, AND COMPLITE. I AMD THE DESIRE THE AND COMPLITE. I AMD THE PERSONGER.	W	(1) CONTRACTORY SIGNATURE SIGNATURE OF PRINCIPAL EXPOUTIVE	NCIPAL EXECUTE	e e	(42)	(423) 229-2000	99 - 09 - 13
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COMMENT AND EXPLANATION OF ANY VIOLATIONS	INY VIOLATIONS		(Reference a	(Reference all attachments here)	s here)					orms by WindowChem(707)864	-0645;p/n11090;v5.01;4/1/96

In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant

instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance.

EPA FORM 3320-1 (REV.9-88) Previous editions may be used.

(REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

(REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

PERMIT NUMBER TN0002640

DIVISION OF EASTMAN CHEMICAL CO.

PERMITTEE NAME/ADDRESS: TN EASTMAN DIVISION

DISCHARGE NUMBER F - FINAL 002 G

(SUBR 06) MAJOR

OMB No. 2040-0004 FORM APPROVED

INDUSTRIAL PROCESS WASTEWATER

EFFLUENT

MONITORING PERIOD ဥ

99 - 09 - 30

99 - 09 - 01

FROM

Location: SULLIVAN COUNTY TN 37662-5393

Facility: TN EASTMAN - KINGSPORT

KINGSPORT, TN 37662-5393

P.O. BOX 1993

" NO DISCHARGE [] "

NOTE: Read instructions before completing this form.

COMMENT AND EXPLANATION OF ANY VIOLATIONS

In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance

PAGE 3 OF 7

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

PERMIT NUMBER TN0002640

DIVISION OF EASTMAN CHEMICAL CO.

PERMITTEE NAME/ADDRESS:

IN EASTMAN DIVISION

(SUBR 06) F - FINAL DISCHARGE NUMBER

OMB No. 2040-0004

FORM APPROVED

MAJOR

INDUSTRIAL PROCESS WASTEWATER " NO DISCHARGE **EFFLUENT** 8 60 - 66 MONITORING PERIOD ဂ္ဂ

99 - 09 - 01

Location: SULLIVAN COUNTY TN 37662-5393

Facility: TN EASTMAN - KINGSPORT

KINGSPORT, TN 37662-5393

P.O. BOX 1993

CONFOSITE COMPOSITE COMPOSITE RECORDER Composite Composite Composite Sample DATE (02-69)≨ NOTE: Read instructions before completing this form CNCEMONTH ONCEMONTH Frequency of CONTINUOUS Continuous 3WEEK Analysis (64-68)1/30 130 TELEPHONE 37 (62-63)S0 0 0 0 H Q Q MG/L *** *** (19) (19) 1270 DAILY WAX Concentration DAILY MAX MAXIMUM 0.029 (54-61)3.980 ****** ******* 0.067 Quantity or 0.635 MON AVG **HON AVG** AVERAGE 0.029 1.690 ******* Take See ******** **** (46-53)0.067 (4 Card Only) MINIMOM ***** ****** (38-45)STREET, STREET, STREET ******* ******* CERTOT HANCE REPAIRED ON THAT THE DOCUMENT NO ALL ATTACHMENTS WERE INDIDUCED WHICH IN BRIGHTER WE SET THAT CHOOSE THE SET THAT CHOOSE THE ATTACHMENT WERE THAT CHOULTED RESONANT WERE THAT CHOOSE THE SET THAT CHOOSE THE SET THAT CHOOSE THE SET THAT CHOOSE THE SET THAT CHOOSE THAT THE SET THAT CHOOSE THE CHOOSE THE CHOOSE THAT CHOOSE THE CHOOSE THE CHOOSE THAT CHOOSE THE CHOOSE THE CHOOSE THE CHOOSE THE CHOOSE THE CHOOSE THAT CHOOSE THE CHOOSE THE CHOOSE THE CHOOSE THE CHOOSE THAT CHOOSE THE CHOOSE THE CHOOSE THAT CHOOSE THE CHOOSE THAT CHOOSE THE CHOOSE TH LBS/DAY LBS/DAY LBS/DAY Loading Q S S ENS (03) (56) 8 (38) Quantity or 277.54 DAILY MAX DAILY MAX. DAILY MAX DAILY WAX MAXIMUM REPORT 869.66 15.86 2,812 8500 (54-61)29.6 6.87 369.28 MON AVG (3 Card Only) REPORT MON AVG HON AVG MON AVG AVERAGE 138.77 1,473 15.86 \$ (46-53)26.9 6.87 MEASUREMENT MEASUREMENT MEASUREMENT MEASUREMENT MEASUREMENT MEASUREMENT MEASUREMENT REQUIREMENT REQUIREMENT REQUIREMENT REQUIREMENT REQUIREMENT REQUIREMENT REQUIREMENT SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE PERMIT SAMPLE PERMIT SAMPLE PERMIT PERMIT PERMIT PERMIT PERMI NAME / TITLE PRINCIPAL EXECUTIVE OFFICER Tennessee Eastman Division THRU TREATMENT PLANT **EFFLUENT GROSS VALUE EFFLUENT GROSS VALUE** H. H. Holliman, President BOD, CARBONACEOUS NICKEL, TOTAL (AS NI) **EFFLUENT NET VALUE** FLOW, IN CONDUIT OR **EFFLUENT NET VALUE PARAMETER** ZINC, TOTAL (AS ZN) 80082 2 W 0 01092 2 0 0 50050 1 0 0 01067 2 0 0 05 DAY, 20C

COMMENT AND EXPLANATION OF ANY VIOLATIONS

TYPED OR PRINTED

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(Reference all attachments here)

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(REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

AREA CODE NUMBER YEAR MO DAY Forms by WindowChem/707)884-0045-ph/1080;45-ph/1080

99 - 10 - 12

(423) 229-2000

SIGNATURE OF PRINCIPAL EXEQUTIVE OFFICER OR AUTHORIZED AGENT

GRAB YEAR MO DAY GRAB :: 99 - 10 - 12 GRAB GRAB FORM APPROVED OMB No.2040-0004 NOTE: Read instructions before completing this form. GRAB GRAB Grab DATE GRAB Grab Grab (02-69)Grab Grab Grab Grab PROCESSED WW QUARTERLY REPORT AREA CODE NUMBER (423) 229-2000 QUARTERLY QUARTERLY TELEPHONE QUARTERLY QUARTERLY **QUARTERLY** QUARTERLY QUARTERLY Frequency of 1/Quarter 1/Quarter 1/Quarter 1/Quarter 1/Quarter 1/Quarter analysis 1/Quater (64-68)(62-63 0 Š Ž 0 0 0 0 0 0 EFFLUENT (SUBR 06) SIGNATURE OF PRINCIPAL EXECUTIVE F-FINAL OFFICER OR AUTHORIZED AGENT MG/L MAJOR MG/L MG/L MG/L MG/L MG/L MG/L Ë (19) £ 5 65 3 (19) (39) DAILY MAX DAILY MAX 0.046 DAILY MAX DAILY MAX DAILY MAX 99 - 09 - 30 Concentration DAILY MAX DAILY MAX DISCHARGE NUMBER < 0.001 0.080 < 0.001 < 0.001 0:016 0.059 < 0.001 < 0.001 < 0.001 0.242 < 0.001 0.038 Maximum 0.211 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) MONITORING PERIOD 0.022 MON AVG MON AVG MON AVG MON AVG MON AVG HON AVE HON AVG 5 Average 0.008 ******* ******* 0.096 0.018 **** ****** ****** 0.026 ***** 0.068 0.021 ****** ဝ Quality 005 DISCHARGE MONITORING REPORT (DMR) DROGMATTON DYLLUDDRO, THE POSSIBILITY OF FIPE, AND EMPRISONMENT SEE IN USC. 100 AND 31 USC. 1319 (PENALTIES UNDER THESE STATUTES MAY INCLUDE FPAES UP TO \$10,000 AND OR MAXIMUM IMPRISONAGENT OF BETWEEN 6 MONTHS AND 5 YEARS) FAMILAN WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS INDIGENTELY RESPONSIBLE FOR DISTAINING THE INFORMATION 1 99 - 07 - 01 BELEVE THE SUBMITTED OFFORMATION IS TRUE, ACCURATE AND COMPLETE 1 AM (4 Card Only) Minimum AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE ****** **** ***** ******* The spinster, **** Section 2 -******* distantiate in **** ****** LBS/DAY LBS/DAY LBS/DAY LBS/DAY LBS/DAY LBS/DAY Loading PERMIT NUMBER FROM Unit (26) (36) (58)(50)(36) (26) 92 DAILY MAX DAILY MAX DAILY MAX DAILY MAX DAILY MAX DAILY MAX TN0002640 6 < 0.20 52.88 < 0.20 < 0.20 12.89 < 0.20 < 0.20 Maximum < 0.20 < 0.20 10.05 46.11 Quantity (24-61)8.30 MON AVG MON AVG MON AVG MON AVG MON AVG. (3 Card Only) MON AVG **JON AVG** Average ******* 20.98 ******* ******* ******* ****** 5.68 £ ****** ¥.59 (46-53)Location: SULLIVAN COUNTY TN 37662-5393 REQUIREMENT REQUIREMENT REQUIREMENT MEASUREMEN REQUIREMENT MEASUREMEN REQUIREMENT MEASUREMEN REQUIREMENT MEASUREMEN REQUIREMENT MEASUREMEN MEASUREMEN MEASUREMEN DIVISION OF EASTMAN CHEMICAL CO. SAMPLE SAMPLE SAMPLE SAMPLE PERMIT SAMPLE SAMPLE PERMIT NAME/TITLE PRINCIPAL EXECUTIVE OFFICER PERMIT PERMIT SAMPLE PERMIT PERMIT Facility: TN EASTMAN - KINGSPORT TN 37662-5393 Tennessee Eastman Division TYPED OR PRINTED H. H. Holliman, President IN EASTMAN DIVISION PERMITTEE NAME/ADDRESS: CARBON TETRACHLORIDE EFFLUENT NET VALUE **EFFLUENT NET VALUE** EFFLUENT NET VALUE **PARAMETER EFFLUENT NET VALUE** EFFLUENT NET VALUE EFFLUENT NET VALUE EFFLUENT NET VALUE 1.2-DICHLOROETHANE **ACENAPHTHYLENE** KINGSPORT, ACRYLONITRILE **ICENAPHTHENE** P.O BOX 1993 34215 2 0 0 34205 2 0 0 32106 2 0 0 34010 2 0 0 34200 2 0 0 32103 2 0 0 CHLOROFORM 32102 2 0 0 TOLUENE

COMMENT AND EXPLANATION OF ANY VIOLATIONS

in addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant

(Reference all attachments here)

instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance. (REPLACES EPA FORM T-40 WHICH MAY NOT RF 11SEN) EPA FORM 3320-1 (REV. 9-68) Previous editions may be used.

PERMITTEE NAME/ADDRESS:		NAT	NATIONAL POLLUTA	ANT DISCH	LUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)	ION SYSTEM	(NPDES)	MAJOR			FORM APPROVED
TN EASTMAN DIVISION		•	DISCHARG	E MONITO	DISCHARGE MONITORING REPORT (DMR)	(DMR)		(SUBR 06)	(90		OMB No.2040-0004
DIVISION OF EASTMAN CHEMICAL	HEMICAL CO.		TN0002640			002 Q		F - FINAL	닞		
P.O BOX 1993			PERMIT NUMBER	JMBER		DISCHAR	DISCHARGE NUMBER	PROCE	SSED	PROCESSED WW QUARTERLY REPORT	REPORT
KINGSPORT, TN 37662-5393	5393							EFFLUENT	L		
Facility: TN EASTMAN - KINGSPORT	GSPORT				NOW	MONITORING PE	PERIOD	ON 	DISC	*** NO DISCHARGE [***	
Location SULLIVAN COUNTY	Y TN 37662-5393	-5393		FROM	99 - 07 - 01	10	99 - 09 - 30	NOTE: I	Read in:	NOTE: Read instructions before completing this form.	npleting this form.
PARAMETER (32-37)		(3 Card Only)	Quantity or	Loading	(4 Card Only)	Quality or	Concentration		Ŏ. Y.	Frequency of	Sample
		Average	Maximum	Chit	Minimum	Average	Maximum	Unit	(62-63)	(64-68)	(02-69)
ANTHRACENE	SAMPLE MEASUREMEN	********	V U >	(36)	*******	*****	< 0.001	(19)	c	1/Ouarter	Grab
34220 2 0 0 FEET HENT NET VALUE	PERMIT REQUENT	0.479	0.354)	1874	0.00082	0.00162				でするないできる できない これをからない
RENZENE DIEGOLVED	CANADIE	DAY NOW	UNIC I MAY	LBS/DAY		MON AVG	UAICT MAX	MG/L	ž	GUARIERLY	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
DENZENE, DISSULVED	MEASUREMEN	********	< 0.20	(26)	******	*****	< 0.001	(19)	0	1/Quarter	Grab
34235 2 0 0 EFFLUENT NET VALUE	PERMIT '	SVA WOM	29.72 DAILY MAX	LBS/DAY	in the second se	0.037	DAILY MAX	MG/I		OUARTERLY	GRAB
BENZO (K) FLUORANTHENE	SAMPLE				*******	44444	000	(4)	-	open O'L	Crah
34242 2 0 0	PERMIT	543	3.64	(07)		0.008	1000	6	3	TOTAL TAR	Colon Colon
EFFLUENT NET VALUE	REQUIREMENT	*	DAILY MAX	LBS/DAY		MON AVG	DAILY WAX	MG/L	** 5 } : ``	QUARTERIC	GRAE
BENZO (A) PYRENE	SAMPLE								,		
34247 2 0 0	PERMIT	14.	0.2.0 >	(07)		O DOR	0.001	(A)	0	1/Cuarier	Grad
EFFLUENT NET VALUE	REDUIREMENT	.	DAILY MAX	LBS/DAY		MON AVG	DAILY MAX	MG/L		QUARTERLY	GRAB
CHLOROBENZENE	SAMPLE MEASUREMEN	.,.,,,,,,,	V 0 30	(90)	******	******	V 0 001	ē	-	1/Ouader	Grab
34301 2 0 0	PERMIT	10	6.12	<u> </u>		0.015	0.028	<u> </u>) (Comment of the second of the s	を 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
CHRYSTAIT	KECUIKEMENT	MON AVG	DAILY MAX	LBS/DAY	**************************************	MON AVG	DAILY MAX	MG/L		GUARTERLY	GRAB
CHRISENE	SAMPLE	********	< 0.20	(36)	*******	*******	< 0.001	(19)	0	1/Quarter	Grab
34320 2 0 0 FEET HENT NET VALUE	PERMIT BEOLIDEMENT	0.179	0.354	3		0.00082	0.00162	Š			
DIETHYL PHTHALATE	SAMPLE	DAY NOW	חיור ו	100/CQ1		DAY NOE	חשוניו שעל	MOIN	1	WURN TERLI	CAST STATES OF THE STATES
 	MEASUREMEN	******	< 0.20	(56)	*********	********	< 0.001	(19)	0	1/Quarter	Grab
34336 2 0 0	PERMIT	02.21	98.44			0.081	0.203			The second secon	
NAME OF THE PROPERTY OF THE PARTY OF THE PAR	I VENDINEMENT	CENTRY UNDER PER	I CENTIFY UNDER PENALTY OF LAW THAY I HAVE PERSONALLY EXAMPLED AND AM	LBS/DAY	EXAMINED AND AM	MON AVG	DAILY MAX	MG/L		TELLERICK	CIRCLE
WANTED THINGING EACOUNE OFFICER	VE OFFICER	FAMILIAR WITH THE IM	FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF	HEREIN AND BAS	ED ON MY INQUIRY OF					FLEPHONE	DAILE
H. H. Holliman, President		HUSE BESTY BOALS IN BIELIEVE THE SUBANT AWARE THAT THE DECREAATION BACK LE	THOSE HEAVILY MAN MANELLATES Y RESERVES MEETER OF TARRING THE DESCRIPTION OF BEILDE OF THE STRUCK, ACCURATE AND COMPLETE I AM A MARE THAT THERE ARE SIGNIFICANT FENALTHES FOR SUBMITTING FALSE DEPOSIBILITY OF FINE AND REPRISONMENT SEES IN USC	LEFAR OBTAINING TOTAL ACCURATE A ENALTIES FOR SUR FINE AND IMPRUS	G THE INCORMALITY I I IND COMPLETE I AM MATTING FALSE SONRENT SEE IS USC	The state of the s	Lyller	. 1			
Tennessee Eastman Division	on) 1001 AND 33 USC ,1319 (1001 AND 31 USC, 1319 (PENALTIES UNDER THEISE STATITIES MAY NACLUDE FINES UP TO \$10,000 AND OR MAXIOARIA INPRESSINGENT OF BETWEEN 6 MONTHS AND 3 YEARS)	E STATUTES MAY F BETWEEN 6 MON	TACLUDE FINES UP TO THIS AND 3 YEARS)	SIGNATU	SIGNATURE OF PRINCIPAL EXEQUTIVE	KEDOTINE		(423) 229-2000	99 - 10 - 12
TYPED OR PRINTED						OFFICE	OFFICER OR AUTHORIZED AGENT	AGENT	4	AREA CODE NUMBER	YEAR MO DAY

(Reference all attachments here)

In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance. EPA FORM 3320-1 (REV. 9-88) Previous editions may be used. (REPLACES EPA FORM 7-40 WHICH MAY NOT BE USED.)

PAGE 2 OF 8

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REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)

PARAMETER	\ 	(3 Card Only)	Quantity or	Loading	(4 Card Only)	Quality or	Concentration		Š	Frequency of	Sample
(32-37)	X	(46-53)	(54-61)		(38-45)	(46-53)	(54-61)		Ä	analysis	Туре
	7	Average	Maximum	Unit	Minimum	Average	Maximum	Unit	(62-63)	(64-68)	(02-69)
MITROBENZENE	SAMPLE MEASUREMEN	*****	< 0.20	(26)	******	*******	< 0.001	(19)	0	1/Quarter	Grab
3447 2 0 0	PERMIT	5.90	F			0.027	0.068		1	and the second of the second of the second	To be seen the first of Dand to be a good from the
EFFLUENT NET VALUE	REQUIREMENT	MON AVG	DAILY STAX	LBS/DAY	*******	MON AVG	DAILY MAX	MG/L	,	QUARTERLY	GRAB
PHENANTHRENE	SAMPLE										
	MEASUREMEN	*******	< 0.20	(56)	********	*******	< 0.001	(19)	0	1/Quarter	Grab
34461 2 0 0	PERMIT	0.179	0.354			0.06082	0,00162			A LANGE TO THE STATE OF THE STA	
EFFLUENT NET VALUE	REGUIREMENT	MON AVG	DAILY MAX	LBS/DAY	*******	MON AVG	DAILY MAX	MG/L	- - 1-2 - 1-5 - 1-5	CUARTERLY	GRAB.
PYRENE	SAMPLE										
	MEASUREMEN	*******	< 0.20	(56)	*******	*******	< 0.001	(61)	0	1/Quarter	Grab
34469 2 0 0	PERMIT	0.179	0.354	<u></u>		0.00082	0.00162		· 友	中国	Paragraphic Long Tobbanks
EFFLUENT NET VALUE	REQUIREMENT	NON AVG	DAILY MAX	LBS/DAY	* To this main	MON AVG	DANLY NAX	MG/L	ئے۔'۔ ہ: نے -	QUARTERLY	GRAB
TETRACHLOROETHYLENE	SAMPLE										
-	MEASUREMEN	*******	< 0.20	(26)	*********	********	< 0.001	(19)	0	1/Quarter	Grab
34475 2 0 0	PERMIT	181	12.24			0.022	9:026			大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大	大大の大大の大大の大大の大大大大大大大大大大大大大大大大大大大大大大大大大
EFFLUENT NET VALUE	REQUIREMENT	MON AVG	DAILY MAX	LBS/DAY	- Weiner	MON AVG	DAILY MAX	MG/L		QUARTERLY	GRAE
1,1 - DICHLOROETHANE	SAMPLE										
	MEASUREMEN	*******		(26)	*******	******	< 0.001	(19)	0	1/Quarter	Grab
34496 2 0 0	PERMIT	4.81	12.89			0.022	0.059			The state of the s	
EFFLUENT NET VALUE	REQUIREMENT	MON AVG		X LBS/DAY	*********	MON AVG	DANLY MAX	MG/L	15	QUARTERLY	GRAB
1,1 - DICHLOROETHYLENE	SAMPLE										
	MEASUREMEN	*******		(92)	********	*****	< 0.001	(19)	0	1/Quarter	Grab
34501 2 0 0	PERMIT	3.50				0.016	0.025		1 (1 (1 (1))) A		日本の行政では、日本の
EFFLUENT NET VALUE	REQUIREMENT	MON AVG	DAILY MAX	LBS/DAY	******	MON AVG	DAILY MAX	MG/L		QUARTERLY	STATE CRAB
1,1,1 - TRICHLOROETHANE	SAMPLE										
	MEASUREMEN	******	< 0.20	(56)	*******	*******	< 0.001	(19)	0	1/Quarter	Grab
34506 2 0 0	PERMIT	4.59	11,80	L		0.021	0.054		13.1	Production of the second second	三時日報を成るというななないとうとう
EFFLUENT NET VALUE	REQUIREMENT	MON AVG	DAILY MAX	X LBS/DAY	444	MON AVG	DAILY MAX	MG/L		GUARTERLY	GRAB
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	VE OFFICER	I CERTIFY UNDER FEN FAMILIAR WITH THE IN	I CERTIFY UNDER FENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMELIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY BOOTHRY OF	VE PERSONALLY HEREIN AND BASE	EXAMINED AND AM ED ON MY INQUIRY OF	(TELEPHONE	DATE
H. H. Holliman, President		THOSE INDIVIDUALS BA	THOSE INGIVIDUALS INARDIATELY RESPONSIBLE FOR OBTAINING THE BHORMATION. I BELIEVE THE SIEMMITTED RIFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM	E FOR OBTAINING UE, ACCURATE AN	THE BROKMATION I		0		\		
		AWARE THAT THE INFORMATION INCLUE	AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBARTING FALSE INFORMATION INCLUDING THE POSSBILLITY OF PINE AND IMPRISONMENT SEE IS USC	NT PENALTIES FOR SUBMITTING FALSE. TY OF PINE AND IMPRISONAIENT SEE 18	MITTING FALSE ONNENT SEE IS USC	11/11	aylun	M			
Tennessee Eastman Division	ion	,1001 AND 33 USC., 1349. (PENALTUES UNDER STOOD AND OR MAXIMEM BAPRISONINE	OLAND 33 USC, (319. (PENALTIGS UNDER THESE, STATUTES MAY INCLUDE FINES UP'S 10000 AND OR MAXIMUM DUPISONMENT OF BETWEEN 6 MONTHS AND 5 YEARS)	E STATUTES MAY BETWEEN 6 MON	THESE STATUTES MAY INCLUDE FINES UP TO NT OF BETWEEN 6 MONTHS AND 3 YEARS)	SIGNATU	SIGNATURE OF PRINCIPAL EXECUTIVE	GEO UTINE		(423) 229-2000	99 - 10 - 12
TYPED OR PRINTED						OFFICE	OFFICER OR AUTHORIZED AGENT	AGENT	▼	AREA CODE NUMBER	YEAR MO DAY

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PAGE 5 OF 8

FORM APPROVED NOTE: Read instructions before completing this form. OMB No.2040-0004 PROCESSED WW QUARTERLY REPORT *** NO DISCHARGE **EFFLUENT** SUBR 06) F - FINAL MAJOR 99 - 09 - 30 DISCHARGE NUMBER NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) MONITORING PERIOD O 2 007 DISCHARGE MONITORING REPORT (DMR) 99 - 07 - 01 FROM PERMIT NUMBER N0002640 DIVISION OF EASTMAN CHEMICAL CO. Facility: TN EASTMAN - KINGSPORT 37662-5393 IN EASTMAN DIVISION PERMITTEE NAME/ADDRESS Z P.O BOX 1993 KINGSPORT

GRAB GRAB GRAB GRAB ₽Ą GRAB GRAB 99 - 10 - 12 GRAB DATE Grab Grab (02-69) Grab Grab Grab ₹ Grab Grab YEAR AREA CODE NUMBER OBARTERIN (423) 229-2000 TELEPHONE **QUARTERLY OUARTERLY** QUARTERLY **QUARTERLY** GUARTEREY QUAKTERLY Frequency of 1/Quarter 1/Quarter 1/Quarter 1/Quarter 1/Quarter 1/Quarter 1/Quarter analysis (64-58)小小一卷 计小分离 (62-63) ÷ Š Ņ 0 0 0 0 0 0 0 SIGNATURE OF PRINCIPAL EXECUTIVE Z Z OFFICER OR AUTHORIZED AGENT MG/L 202 Z N E C MG/L MG/L 전 전 전 (36) (6 (19) 13 3 (19) (19) DAILY MAX DAILY WAX Concentration DAILY MAX DAILY WAX DAILY WAX DAILY WAX DAILY MAX 0.098 < 0.001 0.112 < 0.001 < 0.001 < 0.001 < 0.001 < 0.001 0.036 × 0.00 Maximum (54-61) MON AVG MON AVG MON AVG MON AVG MON AVG MON AVG HON AVG ъ Average ****** ****** ******* ******* 0.039 ****** ******* 0.113 ******* 0:015 0.034 0.041 0.018 (46-53)0.031 Quality 100 DOG AND 33 USC, 1319 (PENALTIES UNDER THESE STATUTES MAY INCLUDE FUNES UP TO \$10,000 AND OR MAXIBATIM IMPRISONMENT OF BETWEEN 6 MONTHS AND 5 YEARS) FAULLAR WITH THE INFORMATION SUBBUTTED HEREIN AND BASED ON INT INQUIRY OF THOSE DEDIVIDALS, BAMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION I DECORMATION INCLUDING THE POSSBBLITY OF FINE AND DIPRISONMENT SEE IN USC RELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE I AM (4 Card Only) CERTIFY UNDER FEVALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM Minimum ******* ****** ******** ******* ******* ******* AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE (38-45)******* --**** --A STATE SECTION Personal Property lies LBS/DAY LBS/DAY **LBS/DAY** LBS/DAY LBS/DAY LBS/DAY LBS/DAY Loading Ē (38) (56) (Se (26)(36) 8 (56) DAILY MAX ğ < 0.20 < 0.20 Maximum < 0.20 < 0.20 < 0.20 < 0.20 < 0.20 21,41 15.08 24.47 6.12 7.87 62.27 Quantity 9.61 (3 Card Only) MON AVG MON AVG MON AVG HON AVG MON AVG MON AVG Average HON AVG 24.69 ****** ******* ******* ****** ******* ***** transta. 1 8.96 8.52 3.93 6.77 3.28 ocation: SULLIVAN COUNTY TN 37662-5393 REDUIREMENT REQUIREMENT REQUIREMENT REQUIREMENT REQUIREMENT REQUIREMENT MEASUREMEN MEASUREMEN MEASUREMEN MEASUREMEN MEASUREMEN MEASUREMEN MEASUREMEN REQUIREMENT SAMPLE PERMIT SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE SAMPLE PERMIT PERMIT PERMIT PERMIT NAME/TITLE PRINCIPAL EXECUTIVE OFFICER PERMIT PERMIT Tennessee Eastman Division TYPED OR PRINTED H. H. Holliman, President 1,3 - DICHLOROBENZENE 14 - DICHLOROBENZENE PARAMETER EFFLUENT NET VALUE **EFFLUENT NET VALUE** EFFLUENT NET VALUE 2,4 - DICHLOROPHENOL 2,4 - DIMETHYLPHENOL 2,4 - DINITROTOLUENE 2 - CHLOROPHENOL 2 - NITROPHENOL 34601 2 0 0 34591 2 0 0 34606 2 0 0 34611 2 0 0 34571 2 0 0 34586 2 0 0 34566 2 0 0

COMMENT AND EXPLANATION OF ANY VIOLATIONS

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PERMITTEE NAME/ADDRESS:		NAT	ONAL POLLUTA	ANT DISCH	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)	ION SYSTEM	(NPDES)	MAJOR			FORM APPROVED
TN EASTMAN DIVISION		•	DISCHAR	SE MONITO	DISCHARGE MONITORING REPORT (DMR)	(DMR)		(SUBR 06)	(90		OMB No.2040-0004
DIVISION OF EASTMAN CHEMICAL CO	HEMICAL CO.		TN0002640			002 Q		F - FINAL	ڀ		
P.O BOX 1993			PERMIT N	NUMBER		DISCHAR	DISCHARGE NUMBER	PROCE	SSED	PROCESSED WW QUARTERLY REPORT	REPORT
KINGSPORT, TN 37662-5393	5393							EFFLUENT	LN		
O	GSPORT				MON	MONITORING PE	PERIOD	*** NO DISCHARGE	DISCH	ARGE 📖 🚥	
Location: SULLIVAN COUNTY	Y TN 37662-5393	5393		FROM	10 - 02 - 66	TO	99 - 09 - 30	NOTE: F	tead ins	NOTE: Read instructions before completing this form.	pleting this form.
PARAMETER (32-37)	X	(3 Card Only) (46-53)	Quantity or (54-61)	Loading	(4 Card Only) (38-45)	Quality or (46-53)	Concentration (54-61)		Š XI	Frequency of analysis	Sample Type
	7	Average	Maximum	Unit	Minimum	Average	Maximum	Unit	(62-63)	(64-68)	(69-70)
2,4 - DINITROPHENOL	SAMPLE MEASUREMEN	*******	< 1.60	(26)	******	******	< 0.008	(19)	0	1/Quarter	Grab
34616 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	15.51 MON AVG	26.88 DAILY MAX	LBS/DAY		0.071 MON AVG	0.123 DAILY MAX	MGA	R (1) 10	GUARTERLY	GRAB
2,6 - DINITROTOLUENE	SAMPLE MEASUREMEN	******	< 0.20	(26)	******	*****	< 0.001	(19)	0	1/Quarter	Grab
34626 2 0 0 EFFLUENT NET VALUE	REQUIREMENT	MON AVG	140.06 DAILY WAX	LBS/DAY		0.255 WON AVG	DAILY WAX	MG/L	第二十二	QUARTERLY	GAG
4 - NITROPHENOL	SAMPLE MEASUREMEN	*******	< 0.20	(26)	*****	*******	< 0.001	(19)	0	1/Quarter	Grab
34646 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	15.73 MON AVG	27.09 DAILY MAX	LBS/DAY		0.072 MON AVG	DAILY WAX	MG/L	A TOTAL	OUARTERLY	GRAB
4,6 - DINITRO - O - CRESOL	SAMPLE MEASUREMEN	*********	< 0.20	(26)	*********	******	< 0.001	(19)	0	1/Quarter	Grab
34657 2 0 0 EFFLUENT NET VALUE	PERWIT REQUIREMENT	17.04 WON AVG	DAILY WAX	LBS/DAY		0.078 MON AVG	DAILY MAX	MG/L		QUARTERUY	GRAB
PHENOL, SINGLE COMPOUND	SAMPLE MEASUREMEN	******	< 0.20	(26)	******	*****	< 0.001	(61)	0	1/Quarter	Grab
34694 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	3.28 MON AVG	5.68 DAILY MAX	LBS/DAY		MON AVG	0.026 DAILY MAX	MG/L		GUARTERLY	
NAPHTHALENE	SAMPLE MEASUREMEN	********	< 0.20	(26)	*********	******	< 0.001	(19)	0	1/Quarter	Grab
34696 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	4.81 MON AVG	12.89 DAILY MAX	LBS/DAY	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.022 MON AVG	0.059 DAILY WAX	MG/L		GUARTERLY	GRAB
ETHYL BENZENE	SAMPLE MEASUREMEN	********	< 0.20	(26)	******	*******	< 0.001	(19)	0	1/Quarter	Grab
37371 2 0 0 EFFLUENT NET VALUE	PERMIT REQUIREMENT	6.99 MON AVG	6.99 ZZ.60 MAX LBS/DAY	LBS/DAY	10 10 10 10 10 10 10 10 10 10 10 10 10 1	0,032 MON AVG	DAILY MAX	MG/L		GUARTERLY	SRAB
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	VE OFFICER	I CERTIFY UNDER PEN FAMILIAR WITH THE IN	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMMED AND AM FAMILIAR WITH THE DEVONALTION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF	AVE PERSONALLY HEREDY AND BAS	SED ON MY INQUIRY OF			i		TELEPHONE	DATE
H. H. Holliman, President		THOSE INDIVIDUALS ON HELEVE THE SUBMIT AWARE THAT THE INFORMATION INCLUE	THOSE INDIVIDIALS CHARTIATELY RESYNAEME FOR OSTANINOTHE INFORMATION IN BOLLEVO THE ENTRY INDIVIDIATION IS THUE, ACCURATE AND AWARE THAT THESE ARE SIGNIFICANT REVALTIES FOR SUBMITTING FALSE PROBABATION OF ALSE PROMATION DEALUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE IS USC.	2.E FOR OBTAININ RUE, ACCURATE A ENALTIES FOR SUI F FINE AND IMPRU	IG THE INFORMATION I UND COMPLETE LAM BMITTING FALSE SONMENT SEE IN USC		Coyper	. 1			
Tennessee Eastman Division	OU	, 1001 AND 33 USC, 1319 (\$10,000 AND OR MAX	IND) AND 33 USC, 1319 (PENALTES UNDER THESE STATUTES MAY INCLUDE FINES UP TO STOOD AND OR MAXIMUM IMPRISONMENT OF BETWEEN 6 MONTHS AND 3 YEAR\$)	SE STATUTES MA F BETWEEN 6 MO	Y INCLUDE FINES UP TO NTHS AND 5 YEAR\$)	SIGNATU	SIGNATURE OF PRINCIPAL EXECUTIVE	CECUMINE		(423) 229-2000	
TYPED OR PRINTED		!				OFFICE	OFFICER OR AUTHORIZED AGENT	AGENT	4	AREA CODE NUMBER	YEAR MO DAY

(Reference all attachments here)

In addition to taking reasonable steps to prevent instances of noncompliance through the implementation of SPCC and SPCC-type plans, employee training, etc. when a potentially significant instance occurs, we notify the Division and provide information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the instance.

EPA FORM 3320-1 (REV. 9-88) Previous editions may be used.

(REPLACES EPA FORM 1-40 WHICH MAY NOT BE USED.) FORM APPROVED OMB No.2040-0004 NOTE: Read instructions before completing this form. Sample Type (69-70) 1 PROCESSED WW QUARTERLY REPORT Frequency of analysis *** NO DISCHARGE L . . (64-68) (62-63) **№** ₩ EFFLUENT (SUBR 06) F . FINAL MAJOR Unit e l 5